

Decimals as Percents

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CONCEPT

1

Decimals as Percents

Here you'll learn to write decimals as percents.

Remember Sam and the sweeping dilemma? Well, Sam wrote fractions as percents, but she could also have used decimals.

What would this have looked like?

Here is the problem from the last Concept.



Sam's least favorite part of her afterschool job at the supermarket is closing. When closing the store, the break room has to be swept and mopped. Each of the students who work at the store part-time take turns closing, and every Friday night is Sam's turn. On Friday, Sam got her mop and broom and headed up to the break room. It seemed to be even messier than usual. "Oh no, I will never get done," Sam sighed, but she picked up the broom and began to sweep.

In just fifteen minutes, Sam had swept four-fifths of the room. She was amazed at how quickly the task was getting done with a little focus and effort.

How could we write this fraction as a decimal?

How could we write the fraction of the room left to clean as a decimal?

In this Concept, you will learn all about converting decimals to percents.

Guidance

In an earlier Concept, you learned to convert percents to decimals.

Write 31% as a decimal.

You will recall that to do this, we drop the % sign and move the decimal point two places in to the left. These two places represent the hundredths place of the decimal.

31% becomes .31

Our answer is .31.

We can also write a decimal as a percent. To do this, we are going to move the decimal point two places to the right and add a percent sign.

Write .14 as a percent.

To do this, we move the decimal point two places to the right because two decimal places represent hundredths and percents are out of 100. Then we add in the % sign.

$$\underline{.14}_{\rightarrow} = 14\%$$

Sometimes, you will have a decimal that is written with a zero for the tenths place. We do the same thing to convert to a percent. Move the decimal two places to the right and add a percent sign.

Write .03 as a percent.

.03 becomes 3%

What about a decimal that does not have two decimal places represented?

Write .2 as a percent.

To do this, we move the decimal point two places to the right, which will require adding a zero. Then we can see that two tenths becomes 20 percent.

$$\underline{.20}_{\rightarrow} = 20\%$$

What about if you have a decimal with more than two places?

When this happens, it is an interesting case, because you have to move the decimal point two places to the right, but you will have a percent that is also a decimal.

.345

.345 becomes 34.5%.

Red Alert!

Don't worry too much about these now- you will continue to work with fractional percents in later math classes.

Now it is time for you to practice. Write each decimal as a percent.

Example A

.85

Solution: 85%

Example B

.09

Solution: 9%

Example C

.5

Solution:50%

Now let's go back to Sam and her sweeping. Here is the original problem.

Sam's least favorite part of her after school job at the supermarket is closing. When closing the store, the break room has to be swept and mopped. Each of the students who work at the store part-time take turns closing, and every Friday night is Sam's turn. On Friday, Sam got her mop and broom and headed up to the break room. It seemed to be even messier than usual.

"Oh no, I will never get done," Sam sighed, but she picked up the broom and began to sweep.

In just fifteen minutes, Sam had swept four-fifths of the room. She was amazed at how quickly the task was getting done with a little focus and effort.

How could we write this fraction as a decimal?

How could we write the fraction of the room left to clean as a decimal?

Sam had swept four - fifths of the room. We can convert four - fifths to a decimal. First, let's write it as a proportion.

$$\frac{4}{5} = \frac{x}{100}$$

Now we can solve the proportion.

$$\frac{80}{100}$$

The decimal is .80.

Now we can use mental math to figure out the decimal of the room that she has left to sweep.

Sam has .20 left to sweep.

Vocabulary

Here are the vocabulary words in this Concept.

Percent is "per-cent" or "per-hundred", it is a quantity written with a % sign, a part of a whole (100)

Fraction a part of a whole, related to decimals and percents.

Decimal a part of a whole shown by a decimal point, hundredths means two decimal places.

Equivalent means equal

Guided Practice

Here is one for you to try on your own.

What is .009 as a percent?

Answer

To convert a decimal to a percent, we move the decimal point two places to the right and add a percent sign.

Our answer is .9%.

Interactive Practice



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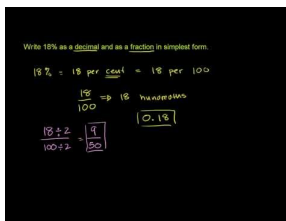


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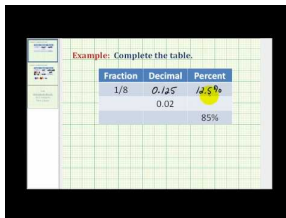
Here are videos for review.



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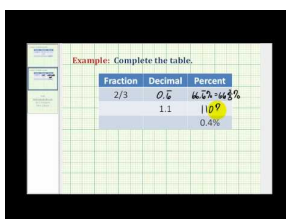
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James Sousa, An Example Relating Fractions, Decimals, and Percents



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James Sousa, A Second Example Relating Fractions, Decimals, and Percents

Practice

Directions: Write each decimal as a percent.

1. .31
2. .56
3. .43
4. .08
5. .01
6. .4
7. .6
8. .65
9. .33
10. .19
11. .3
12. .9
13. .11
14. .18
15. .34
16. .99
17. .21
18. .88